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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,771	06/01/2001	Takaya Sato	8292.029	1304

7590 06/09/2004

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EXAMINER	
CANTELMO, GREGG	
ART UNIT	**PAPER NUMBER**
1745	

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/870,771	SATO ET AL.	
	Examiner	Art Unit	
	Gregg Cantelmo	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4 and 7-11* is/are pending in the application.

4a) Of the above claim(s) *7 and 8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,9 and 10* is/are rejected.

7)☒ Claim(s) *11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the amendment received May 27, 2004:

   a. Claims 1, 3, 4 and 7-11 are pending with claims 7 and 8 withdrawn from consideration. Claims 2 and 5-6 have been cancelled as per Applicant's request;

   b. The 112 rejection stands;

   c. The 103 rejection to Tanaka stands.

Election/Restrictions

2. This application contains claims 7 and 8 drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Specification

3. The substitute specification filed May 27, 2004 has been entered.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 10 provides for the use of the electrode, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

The amendment to claim 10 does not sufficiently overcome the 112 rejection.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 3, 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent No. 5,462,820 (Tanaka), of record.

Tanaka teaches of a method of manufacturing an electrode structure comprising an electrode material, binder and solvent onto a current collecting member and directing warm breeze onto the compound mixture to gradually vaporize the solvent and form an electrode film on the current collecting member. The prior art teaches of using air at 20-350 °C and preferably 40° C to 200° C. The speed of the air ranges from 0.1 to 100 m/sec and preferably 1 to 30 m/sec (col. 5, ll. 1-10). 0.1 m/sec and 1 m/sec being specific data points in the instant claimed range (as applied to claim 1). The air is controlled at preferable temperatures from 40-200° C and a preferable rate of 1-30 m/second (as applied to claim 1).

At a temperature of 40-200° C, and an additional teaching of drying via low-moisture air (i.e. dry air) this range will inherently provide a dry air heat (col. 1, 5, ll. 2-10 as applied to claim 3).

The mixture contains an electrically conductive material (Example 1 and col. 3, line 4 through col. 4, line 9 as applied to claim 4).

The polymer separator is disposed between the electrodes and effectively coats the electrode surfaces facing one another at the electrolyte (Example 1). Additionally the separator becomes ion-conductive by absorbing some of the electrolyte solution injected into the battery (col. 12, ll. 25-33 as applied to claim 9).

The structure is used for a battery (abstract as applied to claim 10).

The difference between claim 1 and Tanaka is the scope of the ranges of the speed of the air and temperature of the air.

As discussed above the lower portion of the range of Tanaka and specific data points of 0.1 m/sec and 1 m/sec are explicitly within the range of claim 1 and thus are held to be a clear teaching of this range.

With respect to the temperature: Tanaka teaches of a temperature range from 20-350°C and preferably 40°C to 200°C. The instant claim recites a range of 60-150°C.

When a solvent remains in the depolarizing mix for the electrode, a drying step is employed using dry air at a temperature range from 20-350°C and preferably 40°C to 200°C and a wind velocity from 0.1 to 100 m/sec, preferably 1 to 30 m/sec.

The preferable range of 40-200 °C encompasses the instant claimed range.

It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919, F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990).

In reviewing the overall teachings of Tanaka, there is sufficient disclosure to lead one of ordinary skill in the art to employ any combination of speeds and temperatures within the range of Tanaka for the purpose of evaporating the solvent from the mixture.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Tanaka by selecting any

temperature and air speed in the range of Tanaka since it would have provided sufficient means for evaporating the solvent from the electrode. It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919, F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990). Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesche , 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

Response to Arguments

9. Applicant's arguments filed May 27, 2004 have been fully considered but they are not persuasive.

Tanaka teaches of a temperature range from 20-350°C and preferably 40°C to 200°C, as well as speeds from 0.1-100 m/sec, preferably 1-30 m/sec.

The instant claim recites a temperature range from 60-150 °C, as well as speeds from 0.1-3 m/sec.

The background disclosure of the instant application is not linearly applicable to the teachings of Tanaka since the range of temperature and air speed in the background art and that of Tanaka are not identical.

As discussed above the breadth of Tanaka is held to encompass both the temperature and air speed of the breeze recited in the instant claims. It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). Furthermore, in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919, F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990). Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesche , 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

There is still no clear evidence supporting Applicant's arguments which shows that the claimed range achieves unexpected results relative to the prior art range. Any statements made by Applicant in the arguments received May 27, 2004 are not in the form of a declaration and void of clear evidence supporting such positions. Therefore, at best these arguments are taken as Applicant's opinion.

While the prior art of Tanaka may not explicitly teach of the narrower claimed ranges, there is sufficient teaching in the prior art of Tanaka to use any combination of temperature and air speed to evaporate the solvent from the electrode and insufficient evidence that the instant claimed range achieves unexpected results relative to the range of Tanaka.

Therefore the prior art rejection stands.

Allowable Subject Matter

10. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of record are considered to teach, suggest or render obvious the invention of claim 11 wherein the electrode material is coated with the ion-conducting polymer by press-sliding.

Tanaka does not teach or suggest this method step. The remaining prior art of record fails to teach or suggest this step as well. See page 19 of the original specification which discloses the advantage of press-sliding these materials, incorporated herein.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday to Thursday from 9 a.m. to 6 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregg Cantelmo
Primary Examiner
Art Unit 1745

gc

June 7, 2004